

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

Please cancel claims 1-18.

19. (New) A biocompatible block copolymer having at least two chemically different block units obtainable by linear polycondensation of (1) a diol with (2) a component selected from the group consisting of the same diol, an α,ω -dihydroxypolyester and an α,ω -dihydroxypolyether, (3) in the presence of an additional compound selected from the group consisting of a diisocyanate, a diacid halide and a phosgene,

wherein the diol is obtainable by transesterification of α,ω -dihydroxy-[oligo(3-(R)-hydroxybutyrate)-ethylene-oligo-3-(R)-hydroxybutyrate) with a compound selected from the group consisting of a diglycolide, a dilactide, a caprolactone and mixtures thereof,

the α,ω -dihydroxypolyester is obtainable by transesterification of poly-(R)-hydroxyvaleric acid or copolymers thereof with 3-hydroxyvaleric acid with ethylene glycol,

the α,ω -dihydroxypolyether is selected from the group consisting of α,ω -dihydroxypoly(oxytetramethylene), α,ω -dihydroxypoly(oxyethylene) and copolymers of ethylene glycol and propylene glycol.

20. (New) The biocompatible block copolymer as claimed in claim 19, wherein the block copolymer is poly[poly[α,ω -dihydroxy-[oligo(3-(R)-hydroxybutyrate)-stat-glycolide)-ethylene-oligo-(3-(R)-hydroxybutyrate-stat-glycolide)]alt-2,2,4-trimethylhexamethylene 1,6-diisocyanate]]-co-poly[dihydroxy[oligo-glycolide-*ran*- ϵ -

caprolactone)-ethylene-(oligo-glycolide-*ran*- ϵ -caprolactone)]alt-2,2,4-trimethylhexamethylene 1,6-diisocyanate].

21. (New) The biocompatible block copolymer as claimed in claim 19, wherein the block copolymer is biodegradable.

22. (New) The biocompatible block copolymer as claimed in claim 19, wherein the block copolymer is degradable in human and animal bodies.

23. (New) The biocompatible block copolymer as claimed in claim 19, wherein the block copolymer is melt-processible.

24. (New) The biocompatible block copolymer as claimed in claim 19, wherein the block copolymer is obtainable by linear co-condensation with further low molecular weight compounds having additional functional groups.

25. (New) The biocompatible block copolymer as claimed in claim 24, further comprising chemically bonded pharmaceutically active substances or diagnostics.

26. (New) A shaped article comprising the biocompatible block copolymer as claimed in claim 19.

27. (New) A medical or veterinary medical implant comprising the biocompatible block copolymer as claimed in claim 19.

- 28 (New) .An implant as claimed in claim 27, wherein the implant has a porous structure.
29. (New) The implant as claimed in claim 27, wherein the implant is in the form of a tube having one or more channels.
- 30 (New) .The implant as claimed in claim 27, wherein the implant is in the form of a heart valve.
31. (New) A surgical aid intended to be fixed in and/or on a human and/or animal body, comprising the biocompatible block copolymer as claimed in claim 19.
32. (New) A diol obtainable by transesterification of α,ω -dihydroxy-[oligo(3-(R)-hydroxybutyrate)-ethylene-oligo-(3-(R)-hydroxybutyrate)] with a diglycolide.
33. (New) The diol as claimed in claim 32, wherein the diol is α,ω -dihydroxy-[oligo(3-(R)-hydroxybutyrate)-stat-glycolide)-ethylene-oligo-(3-(R)-hydroxybutyrate-stat-glycolide)].
34. (New) A process for preparing a diol, comprising reacting α,ω -dihydroxy-[oligo(3-R-hydroxybutyrate)-ethylene-oligo-3-(R)-hydroxybutyrate)] with at least one compound selected from the group consisting of diglycolides, dilactides, caprolactones and mixtures thereof.

35. (New) The process as claimed in claim 34, wherein the reacting is carried out in the presence of a catalyst.

36. (New) The process as claimed in claim 34, further comprising dissolving the diol in methylene chloride for purification, and removing impurities.